

# Mineral Industry Surveys

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## IRON ORE IN SEPTEMBER 2006

U.S. mine production of iron ore in September 2006, on a daily average basis, was 2% more than that of the prior month, according to the U.S. Geological Survey. Average daily production, at 157,000 metric tons per day (t/d), was 3,100 t/d more than that of August 2006.

Average daily shipments in September 2006, at 176,000 t/d, were 2% more than those of August. Mine stocks at the end of September were 563,000 metric tons (t) less than those held on August 31, a 6% decrease.

U.S. imports of iron ore in August 2006 were 8% greater than exports, with imports exceeding exports by 84,000 t.

**World Production.**—Rio Tinto plc announced third quarter production for 2006. Rio Tinto's share of saleable quantities of iron ore plus pellets year-to-date were as follows (Australia, unless otherwise specified): Channar (60%-owned), 4.3 million metric tons (Mt); Corumba, Brazil, 1.4 Mt; Eastern Range, 6.1 Mt; Hamersley, 58.2 Mt; Iron Ore Company of Canada (59%-owned), 6.9 Mt; and Robe River (53%-owned), 20.7 Mt. Thus, Rio Tinto's share of total mine production from these operations for the first three quarters of 2006 was 97.7 Mt compared with 92.0 Mt for the same period in 2005 (Rio Tinto plc, 2006§<sup>1</sup>).

BHP Billiton Limited (BHPB) announced third quarter production figures for 2006. BHPB's share of saleable quantities of iron ore (wet) year-to-date were as follows (Australia, unless otherwise specified): Area C Joint Venture (JV) (85%-owned), 13.6 Mt; Goldsworthy JV (85%-owned), 4.0 Mt; Jimblebar (85%), 4.6 Mt; Mt. Newman JV (85%-owned), 19.8 Mt; Samarco, Brazil (50%-owned), 5.7 Mt; and Yandi JV (85%-owned), 25.9 Mt. Thus, BHPB's share of total mine production from these operations for the first three quarters of 2006 was 73.6 Mt compared with 72.9 Mt for the same period in 2005. The ramp-up of several expansion projects at the Western Australia Iron Ore operations was offset somewhat by a temporary capacity reduction at Goldsworthy owing to Rapid Growth Project construction (BHP Billiton Limited, 2006§).

In the first three quarters of 2006, Brazil's Companhia Vale do Rio Doce (CVRD) reported record iron ore production of 201.1 Mt, an increase of 12.8% compared with that of the same period in 2005, partially owing to opening of the Brucutu Mine (See Iron Ore in July 2006.). Pellet production for the quarter increased to 8.7 Mt with the reopening of the São Luis pellet plant, but was still below that of the third quarter of 2005 owing to sale of CVRD's share of Gulf Industrial Investment Company, a Bahrain-based pellet producer (Companhia Vale do Rio Doce, 2006§).

Cleveland-Cliffs Inc. continued to diversify its iron ore base. After purchasing majority interest in Australia's Portman Limited in early 2005, Cliffs announced its intention to acquire a 30% interest in the Amapá project in Brazil (Cleveland-Cliffs Inc., 2006a§).

**Domestic Production.**—Cliffs announced production for the third quarter of 2006 for its operations in North America. Mine production year-to-date was as follows (United States, unless otherwise specified): Empire, 3.7 Mt; Hibbing Taconite, 6.4 Mt; Northshore, 3.9 Mt; Tilden, 5.3 Mt; United Taconite, 3.9 Mt; and Wabush (Canada), 2.9 Mt. Cliffs' share of this total production, 26.0 Mt, was 16.2 Mt. Total production volume for the 9-month period was down 5% compared with that of the same period in 2005, mainly owing to decreased demand from steel producers (Cleveland-Cliffs Inc., 2006b§).

## Internet References Cited

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- Cleveland-Cliffs Inc., 2006b (October 25), Cleveland-Cliffs reports third-quarter earnings, accessed December 7, 2006, via URL <http://www.cleveland-cliffs.com>.
- Companhia Vale do Rio Doce, 2006 (November 8), CVRD—3Q06 production report, accessed December 7, 2006, at URL [http://www.cvr.com.br/cvr\\_us/media/PREPORT3T06i.pdf](http://www.cvr.com.br/cvr_us/media/PREPORT3T06i.pdf).
- Rio Tinto plc, 2006 (October 18), Third quarter 2006 operations review, accessed December 6, 2006, via URL <http://www.riotinto.com>.

<sup>1</sup>References that include a section mark (§) are found in the Internet References Cited section.

TABLE 1  
U.S. PRODUCTION AND SHIPMENTS OF IRON ORE<sup>1,2</sup>  
(Exclusive of ore containing 5% or more of manganese)

(Thousand metric tons)

| Period    | Production |              | Shipments |              |
|-----------|------------|--------------|-----------|--------------|
|           | Monthly    | Year to date | Monthly   | Year to date |
| 2005:     |            |              |           |              |
| September | 4,460      | 40,900       | 5,150     | 37,400       |
| October   | 4,480      | 45,400       | 5,190     | 42,600       |
| November  | 4,740      | 50,200       | 4,330     | 46,900       |
| December  | 4,380      | 54,500       | 4,880     | 51,800       |
| 2006:     |            |              |           |              |
| January   | 4,600      | 4,600        | 3,600     | 3,600        |
| February  | 3,820      | 8,420        | 953       | 4,550        |
| March     | 4,600      | 13,000       | 2,330     | 6,880        |
| April     | 4,220      | 17,200       | 5,020     | 11,900       |
| May       | 4,750      | 22,000       | 5,020     | 16,900       |
| June      | 4,450      | 26,400       | 5,120     | 22,000       |
| July      | 4,710      | 31,100       | 5,490     | 27,500       |
| August    | 4,780      | 35,900       | 5,370     | 32,900       |
| September | 4,720      | 40,600       | 5,280     | 38,200       |

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Excludes byproduct ores.

TABLE 2  
U.S. PRODUCTION, SHIPMENTS, AND STOCKS OF IRON ORE IN SEPTEMBER<sup>1,2</sup>

(Thousand metric tons)

| State     | Production |       | Shipments <sup>3</sup> |       | Stocks <sup>4</sup> |       |
|-----------|------------|-------|------------------------|-------|---------------------|-------|
|           | 2006       | 2005  | 2006                   | 2005  | 2006                | 2005  |
| Michigan  | 1,020      | 1,080 | 1,020                  | 1,300 | 2,040               | 1,730 |
| Minnesota | 3,700      | 3,380 | 4,260                  | 3,850 | 6,150               | 4,830 |
| Total     | 4,720      | 4,460 | 5,280                  | 5,150 | 8,190               | 6,550 |

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes byproduct ore.

<sup>3</sup>Includes rail and vessel.

<sup>4</sup>Includes usable (marketable) material at mines, concentrators, pelletizing plants, and loading docks. Excludes stocks of crude ore at mine and concentrates at agglomerating complexes.

TABLE 3  
CANADA: SHIPMENTS OF IRON ORE<sup>1,2</sup>

(Thousand dry metric tons)

| Period     | Newfoundland<br>and Labrador | Quebec | British<br>Columbia | Total  |
|------------|------------------------------|--------|---------------------|--------|
| 2005:      |                              |        |                     |        |
| August     | 1,430                        | 708    | 10                  | 2,150  |
| September  | 1,800                        | 1,160  | 9                   | 2,960  |
| October    | 2,000                        | 927    | 10                  | 2,930  |
| November   | 1,920                        | 1,320  | 10                  | 3,250  |
| December   | 1,900                        | 1,130  | 9                   | 3,040  |
| Year total | 19,100                       | 10,900 | 106                 | 30,100 |
| 2006:      |                              |        |                     |        |
| January    | 1,010                        | 705    | 10                  | 1,720  |
| February   | 951                          | 730    | 10                  | 1,690  |
| March      | 1,210                        | 730    | 7                   | 1,950  |
| April      | 1,840                        | 1,170  | 8                   | 3,030  |
| May        | 1,670                        | 1,610  | 12                  | 3,280  |
| June       | 1,550                        | 1,180  | 10                  | 2,740  |
| July       | 2,040                        | 1,220  | 8                   | 3,270  |
| August     | 1,740                        | 1,740  | 8                   | 3,490  |

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes production from steel plant waste oxides.

Source: Natural Resources Canada.

TABLE 4  
PRODUCTION OF PIG IRON AND RAW STEEL IN THE UNITED STATES, BY TYPE OF FURNACE<sup>1</sup>

(Thousand metric tons)

| Period    | Pig iron production,<br>blast furnace |              | Raw steel production              |              |                  |              |
|-----------|---------------------------------------|--------------|-----------------------------------|--------------|------------------|--------------|
|           | Monthly                               | Year to date | Basic oxygen furnace <sup>2</sup> |              | Electric furnace |              |
|           |                                       |              | Monthly                           | Year to date | Monthly          | Year to date |
| 2005:     |                                       |              |                                   |              |                  |              |
| August    | 2,890                                 | 24,700       | 3,180                             | 27,700       | 4,370            | 33,900       |
| September | 2,840                                 | 27,500       | 3,330                             | 31,000       | 4,440            | 38,400       |
| October   | 2,940                                 | 30,500       | 3,470                             | 34,500       | 4,810            | 43,200       |
| November  | 3,000                                 | 33,500       | 3,170                             | 37,700       | 4,660            | 47,800       |
| December  | 2,840                                 | 36,300       | 3,380                             | 41,000       | 4,420            | 52,300       |
| 2006:     |                                       |              |                                   |              |                  |              |
| January   | 3,190                                 | 3,190        | 3,560                             | 3,560        | 4,530            | 4,530        |
| February  | 3,100                                 | 6,300        | 3,470                             | 7,030        | 4,250            | 8,780        |
| March     | 3,420                                 | 9,710        | 3,800                             | 10,800       | 5,070            | 13,900       |
| April     | 3,280                                 | 13,000       | 3,640                             | 14,500       | 4,870            | 18,700       |
| May       | 3,460                                 | 16,500       | 3,850                             | 18,300       | 5,060            | 23,800       |
| June      | 3,330                                 | 19,800       | 3,790                             | 22,100       | 4,790            | 28,600       |
| July      | 3,210                                 | 23,000       | 3,660                             | 25,800       | 4,800            | 33,400       |
| August    | 3,200                                 | 26,200       | 3,620                             | 29,400       | 4,840            | 38,200       |

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Raw steel production figures for the basic oxygen process are usually greater than the corresponding pig iron production figures because scrap is routinely melted in the basic oxygen furnace together with the molten pig iron.

Source: American Iron and Steel Institute.

TABLE 5  
U.S. EXPORTS OF IRON ORE, BY COUNTRY OF DESTINATION AND TYPE<sup>1,2</sup>

(Thousand metric tons)

| Country of destination<br>and type of product | 2005   | 2006        |             |      |        |
|---|--------|-------------|-------------|------|--------|
|   |        | 1st quarter | 2nd quarter | July | August |
| Algeria                                       | --     | --          | --          | 100  | 102    |
| Canada  | 11,200 | 998         | 2,370       | 705  | 998    |
| China   | 282    | --          | 100         | --   | --     |
| Mexico  | 30     | 13          | 11          | (3)  | (3)    |
| Slovakia                                      | 237    | --          | --          | --   | --     |
| United Kingdom                                | 78     | --          | --          | --   | --     |
| Other   | 8      | 1           | 5           | 1    | --     |
| Total   | 11,800 | 1,010       | 2,480       | 806  | 1,100  |
| Pellets                                       | 11,600 | 925         | 2,420       | 800  | 1,090  |
| Concentrates                                  | 89     | 2           | 53          | (3)  | 1      |
| Direct shipping ores                          | 60     | 2           | 8           | 4    | 6      |
| Other   | 11     | 83          | 6           | 2    | 2      |
| Total   | 11,800 | 1,010       | 2,480       | 806  | 1,100  |

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE, BY COUNTRY AND TYPE<sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

| Country of origin<br>and type of product | 2006                       |   |                            |   |  | 2005                       |
|--|----------------------------|---|----------------------------|---|--|----------------------------|
|  | August                     |   | Year to date               |   |  | January-August             |
|  | Thousand<br>metric<br>tons | Value <sup>3</sup><br>(thousand<br>dollars) | Thousand<br>metric<br>tons | Value <sup>3</sup><br>(thousand<br>dollars) | Value <sup>3</sup><br>(dollars<br>per ton) | Thousand<br>metric<br>tons |
| Australia                                | --                         | --  | 8                          | 135   | 16.88                                      | --                         |
| Bahamas, The                             | --                         | --  | --                         | --  | --   | 140                        |
| Brazil                                   | 460                        | 22,200                                      | 2,980                      | 148,000                                     | 49.59                                      | 2,890                      |
| Canada                                   | 676                        | 37,800                                      | 4,060                      | 234,000                                     | 57.68                                      | 4,330                      |
| Chile                                    | 48                         | 2,550                                       | 238                        | 11,500                                      | 48.25                                      | 221                        |
| China                                    | (4)                        | 5   | (4)                        | 5   | 4,500.00                                   | (4)                        |
| Finland                                  | --                         | --  | 6                          | 222   | 37.00                                      | 6                          |
| Greece                                   | --                         | --  | 15                         | 386   | 25.73                                      | 13                         |
| India                                    | --                         | --  | (4)                        | 6   | 5,607.00                                   | --                         |
| Mexico                                   | 1                          | 18  | 9                          | 234   | 26.00                                      | 34                         |
| Norway                                   | --                         | --  | --                         | --  | --   | 3                          |
| Paraguay                                 | --                         | --  | --                         | --  | --   | 4                          |
| Peru                                     | --                         | --  | 38                         | 1,210                                       | 31.71                                      | 32                         |
| Russia                                   | --                         | --  | --                         | --  | --   | 99                         |
| Spain                                    | --                         | --  | --                         | --  | --   | 1                          |
| Sweden                                   | --                         | --  | (4)                        | 6   | 342.88                                     | --                         |
| Trinidad and Tobago                      | --                         | --  | 284                        | 5,900                                       | 20.79                                      | 375                        |
| United Kingdom                           | --                         | --  | (4)                        | 5   | 32.00                                      | --                         |
| Venezuela                                | --                         | --  | 23                         | 439   | 19.09                                      | 148                        |
| Total                                    | 1,180                      | 62,600                                      | 7,650                      | 402,000                                     | 52.47                                      | 8,290                      |
| Concentrates                             | 357                        | 16,300                                      | 1,600                      | 62,900                                      | 39.39                                      | 601                        |
| Coarse ores                              | --                         | --  | --                         | --  | --   | 21                         |
| Fine ores                                | 210                        | 9,920                                       | 1,890                      | 79,600                                      | 42.07                                      | 3,230                      |
| Pellets                                  | 616                        | 36,300                                      | 4,150                      | 259,000                                     | 62.32                                      | 4,370                      |
| Other agglomerates                       | 1                          | 18  | 9                          | 234   | 26.00                                      | 67                         |
| Roasted pyrites                          | (4)                        | 5   | 6                          | 232   | 38.67                                      | 4                          |
| Total                                    | 1,180                      | 62,600                                      | 7,650                      | 402,000                                     | 52.47                                      | 8,290                      |

-- Zero.

<sup>1</sup>Data, with the exception of the dollars per ton column, are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Customs value. Excludes international freight and insurance charges.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE IN AUGUST 2006<sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

| Country of origin | Type of product |                |              |         |   |                    | Total |
|-------------------|-----------------|----------------|--------------|---------|---|--------------------|-------|
|                   | Concentrates    | Coarse<br>ores | Fine<br>ores | Pellets | Briquettes<br>and other<br>agglomerates | Roasted<br>pyrites |       |
| Brazil            | 179             | --             | 210          | 70      | --                                      | --                 | 460   |
| Canada            | 130             | --             | --           | 546     | --                                      | --                 | 676   |
| Chile             | 48              | --             | --           | --      | --                                      | --                 | 48    |
| China             | --              | --             | --           | --      | --                                      | (3)                | (3)   |
| Mexico            | --              | --             | --           | --      | 1                                       | --                 | 1     |
| Total             | 357             | --             | 210          | 616     | 1                                       | (3)                | 1,180 |

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF PELLETS, BY COUNTRY<sup>1</sup>

| Country<br>of origin | 2006                       |   |                            |   |  | 2005                       |
|----------------------|----------------------------|---|----------------------------|---|--|----------------------------|
|                      | August                     |   | Year to date               |   |  | January-August             |
|                      | Thousand<br>metric<br>tons | Value <sup>2</sup><br>(thousand<br>dollars) | Thousand<br>metric<br>tons | Value <sup>2</sup><br>(thousand<br>dollars) | Value <sup>2</sup><br>(dollars<br>per ton) | Thousand<br>metric<br>tons |
| Brazil               | 70                         | 4,560                                       | 1,060                      | 68,200                                      | 64.61                                      | 1,510                      |
| Canada               | 546                        | 31,800                                      | 3,070                      | 190,000                                     | 61.86                                      | 2,760                      |
| Russia               | --                         | --  | --                         | --  | --   | 99                         |
| Venezuela            | --                         | --  | 23                         | 439   | 19.09                                      | --                         |
| Total                | 616                        | 36,300                                      | 4,150                      | 259,000                                     | 62.32                                      | 4,370                      |

-- Zero.

<sup>1</sup>Data, with the exception of the dollars per ton column, are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value. Excludes international freight and insurance charges.

Source: U.S. Census Bureau.

TABLE 9  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE,  
BY CUSTOMS DISTRICT<sup>1, 2</sup>  
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

| Customs district (code no.) | August | January-August |       |
|-----------------------------|--------|----------------|-------|
|                             | 2006   | 2006           | 2005  |
| Baltimore, MD (13)          | 501    | 2,780          | 2,220 |
| Buffalo, NY (09)            | --     | (3)            | 6     |
| Charleston, SC (16)         | --     | (3)            | 1     |
| Chicago, IL (39)            | 164    | 906            | 685   |
| Cleveland, OH (41)          | 401    | 1,850          | 1,710 |
| Detroit, MI (38)            | --     | 102            | 154   |
| Great Falls, MT (33)        | --     | --             | (3)   |
| Houston-Galveston, TX (53)  | --     | 50             | 36    |
| Los Angeles, CA (27)        | (3)    | (3)            | (3)   |
| Mobile, AL (19)             | --     | 5              | 63    |
| New Orleans, LA (20)        | 118    | 1,940          | 3,400 |
| Nogales, AZ (26)            | 1      | 16             | 11    |
| Ogdensburg, NY (07)         | --     | (3)            | (3)   |
| Philadelphia, PA (11)       | --     | 6              | 3     |
| San Francisco, CA (28)      | --     | --             | 4     |
| San Juan, PR (49)           | --     | --             | 6     |
| St. Louis, MO (45)          | --     | (3)            | --    |
| Total                       | 1,180  | 7,650          | 8,290 |

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 10  
U.S. IMPORTS FOR CONSUMPTION OF PELLETS,  
BY CUSTOMS DISTRICT<sup>1</sup>

(Thousand metric tons)

| Customs district (code no.) | August | January-August |       |
|-----------------------------|--------|----------------|-------|
|                             | 2006   | 2006           | 2005  |
| Baltimore, MD (13)          | 146    | 1,140          | 942   |
| Chicago, IL (39)            | --     | 65             | 53    |
| Cleveland, OH (41)          | 401    | 1,850          | 1,710 |
| Detroit, MI (38)            | --     | 102            | 154   |
| Houston-Galveston, TX (53)  | --     | 35             | 36    |
| Mobile, AL (19)             | --     | --             | 61    |
| New Orleans, LA (20)        | 70     | 957            | 1,410 |
| Total                       | 616    | 4,150          | 4,370 |

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.